



**Nombre de alumnos: Mayra
Jeannette Ramírez Santiago**

**Nombre del profesor: Jorge Enrique
Albores Aguilar**

Nombre del trabajo: Ejercicios

Materia: Bioestadística

PASIÓN POR EDUCAR

Grado: 4° cuatrimestre

Grupo: "B".

Comitán de Domínguez Chiapas a 4 de diciembre de 2020.

50 49 25 50 47
 29 46 39 48 25
 20 33 49 40 33
 31 39 43 43 35
 28 23 20 41 31

▷ Rango = $\frac{N^{\circ} \text{ mayor} - N^{\circ} \text{ menor}}{N^{\circ} \text{ de intervalos}}$

▷ Rango = $\frac{50 - 20}{6} = \frac{30}{6} = 5$

Intervalo	f_i	$\% f_i$	f_{ia}	$\% f_{ia}$	\bar{x}_i	$f_i \bar{x}_i$	\bar{x}_i^2	$f_i \bar{x}_i^2$
20-25	3	12%	3	12%	22.5	67.5	506.25	1,518.75
25-30	4	16%	7	28%	27.5	110	756.25	3,025
30-35	5	20%	12	48%	32.5	162.5	1,056.25	5,281.25
35-40	2	8%	14	56%	37.5	75	1,406.25	2,812.25
40-45	4	16%	18	72%	42.5	170	1,806.25	7,225
45-50	7	28%	25	100%	47.5	332.5	2,256.25	15,793.75

$\sum f_i = 25$

$\sum f_i \bar{x}_i = 917.5$

$\sum f_i \bar{x}_i^2 = 35,656.25$

$\bar{x} = \frac{\sum f_i \bar{x}_i}{n} = \frac{917.5}{25} = 36.7$

$Me = \frac{Li + \frac{n}{2} - f_{ia-1}}{f_i} \cdot a_i \quad \frac{n}{2} = \frac{25}{2} = 12.5$

$Me = \frac{35 + 12.5 - 12}{2} = 36.25$

$Mo = \frac{Li + f_i - f_{i-1}}{(f_i - f_{i-1}) + (f_i - f_{i+1})} \cdot a_i$

$Mo = \frac{45 + 7 - 4}{(7 - 4) + (7 - 0)} = 46.5$

$s^2 = \frac{\sum f_i \bar{x}_i^2 - (\sum f_i \bar{x}_i)^2}{n - 1}$

$s^2 = \frac{35,656.25 - (917.5)^2}{25} = 82.66$

Desviación estándar = $\sqrt{82.66} = 9.09$

Mayra Jeannette Ramirez Santiago

80 75 71 80 71 49
 38 56 80 42 68 45
 70 48 75 41 53 54
 78 42 66 45 64 58
 55 56 73 56 41 64
 38 67 79 49 44 38

Rango: $\frac{N^{\circ} \text{ mayor} - N^{\circ} \text{ menor}}{n^{\circ} \text{ de intervalos}}$

Rango: $\frac{80 - 38}{7} = \frac{42}{7} = 6$

Intervalo	f_i	$\% f_i$	f_{ia}	$\% f_{ia}$	\bar{x}_i	$f_i \bar{x}_i$	\bar{x}_i^2	$f_i \bar{x}_i^2$
38-44	8	22.22%	8	22.22%	41	328	1681	13,448
44-50	5	13.88%	13	36.11%	47	235	2,209	11,095
50-56	3	8.33%	16	44.44%	53	159	2,809	8,427
56-62	4	11.11%	20	55.55%	59	236	3,481	13,924
62-68	5	11.11%	25	66.66%	65	260	4,225	16,900
68-74	5	13.88%	29	80.55%	71	355	5,041	25,205
74-80	7	19.44%	36	100%	77	539	5,929	41,503

Mayra Ramirez

$\sum f_i = 36$

$\sum f_i \bar{x}_i = 2112$ $\sum f_i \bar{x}_i^2 = 130,452$

$\bar{x} = \frac{\sum f_i \bar{x}_i}{n} = \frac{2112}{36} = 58.66$

$\frac{n}{2} = \frac{36}{2} = 18$

$M_0 = \frac{38 + 8 \cdot 0.6}{(8-0) + (8-5)} = 42.36$

$M_c = \frac{L_i + \frac{n}{2} - f_{ia} - 1 \cdot a_i}{f_i}$

$S^2 = \frac{\sum f_i \bar{x}_i^2 - (\sum f_i \bar{x}_i)^2}{n}$

$M_e = \frac{56 + 18 - 16 \cdot 6}{4} = 159$

$S^2 = \frac{130,452 - (2112)^2}{36} = 187.08$

Desviación estándar =

$M_0 = \frac{L_i + f_i - f_{i-1} - 1 \cdot a_i}{(f_i - f_{i-1}) + (f_i - f_{i+1})}$

$\sqrt{187.08} = 13.67$

$$q = 1 - p$$

$$D = \frac{B^2}{4}$$

$$n = \frac{Npq}{(N-1)D + pq}$$

Ejercicio 1

$$N = 45000$$

$$p = 0.5$$

$$q = 1 - 0.5 = 0.5$$

$$B = 3\% = 0.03$$

$$D = \frac{(0.03)^2}{4} = 0.000225$$

$$n = \frac{(45000)(0.5)(0.5)}{(44999)(0.000225) + (0.5)(0.5)} = 1,089.36$$

Ejercicio 2

$$N = 20000$$

$$p = 72.5\% = 0.725$$

$$q = 1 - 0.725 = 0.275$$

$$B = 5\% = 0.05$$

$$D = \frac{(0.05)^2}{4} = 0.000625$$

$$n = \frac{(20000)(0.725)(0.275)}{(19999)(0.000625) + (0.725)(0.275)} = 314.007$$

Mayra Jeannette Ramirez Santiago

Ejercicio 3

$$N = 50000$$

$$P = 70\% = 0.70$$

$$q = 1 - 0.70 = 0.30$$

$$B = 1\% = 0.01$$

$$D = \frac{(0.01)^2}{9} = 0.0001$$

$$n = \frac{(50000)(0.70)(0.30)}{(99999)(0.0001) + (0.70)(0.30)} = \boxed{451.887}$$

4. Ejercicio

$$N = 10000$$

$$P = 0.5$$

$$q = 0.5$$

$$B = 5\% = 0.05$$

$$D = \frac{(0.05)^2}{9} = 0.000625$$

$$n = \frac{(10000)(0.5)(0.5)}{(9999)(0.000625) + (0.5)(0.5)} = \boxed{384.652}$$

5. Ejercicio

$$N = 25000$$

$$P = 55\% = 0.55$$

$$q = 1 - 0.55 = 0.45$$

$$B = 2\% = 0.02$$

$$D = \frac{(0.02)^2}{9} = 0.0001$$

$$n = \frac{(25000)(0.55)(0.45)}{(24,999)(0.0001) + (0.55)(0.45)} = \boxed{2,252.12}$$

Mayra Ramirez

6. Ejercicio

$$N = 15000$$

$$P = 66\% = 0.66$$

$$q = 1 - 0.66 = 0.34$$

$$B = 3\% = 0.03$$

$$D = \frac{(0.03)^2}{4} = 0.000225$$

$$n = \frac{(15000)(0.66)(0.34)}{(1.9999)(0.000225) + (0.66)(0.34)} = \underline{1935.21}$$

Mayra Ramirez